

**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MISSOURI  
EASTERN DIVISION**

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UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civil Action No. 4:11-cv-00077-RWS
	)	
AMEREN MISSOURI,	)	Honorable Rodney W. Sippel
	)	
Defendant.	)	
	)	

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**PLAINTIFF'S MEMORANDUM IN SUPPORT OF ITS MOTION  
TO COMPEL PRODUCTION OF COMMUNICATIONS BETWEEN AMEREN AND  
THIRD PARTY UTILITY INDUSTRY ASSOCIATIONS**

**EXHIBIT D**

MODIFICATION ANALYSIS

Physical Change or Operational Change

Emissions Increase

-- NSPS -- Kg/hr

-- PSD -- tpy

Exceptions

-- Routine Repair, Replacement, or Maintenance

-- Increase in Hours of Operation or Production Rate  
(Operational Change Only)

o NSPS: Capital Expenditure Test

o PSD: Permit Condition

-- Others

o Pollution Control (NSPS)

o Fuel Switch

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EXHIBIT

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PHYSICAL OR OPERATIONAL CHANGE

Physical Change

- Any equipment repair or replacement
- NSPS: affected facility
- PSD: source
  - o Non-boiler changes
  - o "Bottle neck" issue

Operational Change

- Changes in fuel or other inputs; production rate; hours; etc.
- WEPCo decision unclear
  - o What time periods are compared?
  - o Are NSPS and PSD different?
- Broad interpretation likely

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EMISSION INCREASE -- NSPS

Emission rate -- Kg/hr

Under What Conditions?

- "Immediately" before and after
- "Representative" operation?
- "Economically sustainable" operation?

Emission tests v. Emission factors

- "Clear" increase or decrease: AP-42
- Conditions for emission tests
  - ° Number of hours/runs
  - ° No standard exceedances

Avoiding emission increases

- Control technology v. clean fuel
- Removing control technology

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EMISSION INCREASE -- PSD

Annual Emissions -- tpy

Under What Conditions?

- Past emissions -- "representative" operation
- Future emissions
  - o "Potential to emit"
  - o "Representative" emissions if operating history

Emission Tests or Emission Factors

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NSPS EXEMPTIONS

Routine Repair, Replacement, Maintenance

- Frequent
- Inexpensive
- Scheduled outage
- Life not extended
- Standard industry design

Production Rate Increase Without Capital Expenditure

- Applicable to physical changes?
- Capital expenditure
  - Affected facility
  - Original basis (adjusted)
  - Multi-year aggregation

Hours of Operation

Pollution Control Equipment

- NSPS only
- Clean fuel as a control method

Fuel Switches

- "Designed to accomodate" test
- Affected facility

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PSD EXEMPTIONS

Routine Repair, Replacement, and Maintenance

- Frequent
- Inexpensive
- Scheduled outage
- Life not extended
- Standard industry design

Production Rate/Hours of Operation Increase

- No permit restriction
- Operational change only
- Only up to original design capacity

Fuel Switches

- "Capable of Accomodating"
- Focus on entire source
  - o Implications for BACT analysis

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CASE STUDIES

Scheduled Maintenance Activity

Unanticipated Breakdown

Fuel Switches

CCT Projects

Combined Cycle Conversion Facility Reactivation

Facility Upgrading

Environmental Control Deratings

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SCHEDULED MAINTENANCE ACTIVITY

Scheduled repairs on:

- Fans
- Boiler tubing
- Air heater

Past Operation at low capacity factor

Case 1

- No physical constraint

Case 2

- Physical constraint

Case 3

- No physical constraint
- Repairs allow more efficient operation

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UNANTICIPATED BREAKDOWN

Unscheduled repairs:

- Fans
- Boiler tubing
- Air heater

Past Operation at low capacity factor

Case 1

- No physical constraint

Case 2

- Physical constraint

Case 3

- No physical constraint
- More efficient operation

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FUEL SWITCH

Case 1 -- Oil to Gas

- Equipment additions
  - o Improved Controls
  - o New burners
  - o Pipeline
- Impact on Operations
  - o Increased utilization
  - o No immediate change

Case 2 -- Oil to Coal

- Equipment additions
  - o Improved controls
  - o New burners
  - o Coal handling facilities
- Impact on operations
  - o Increased utilization
  - o No immediate change
- Post-conversion controls
  - o Low sulfur fuel
  - o Control technology

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Case 3 -- Natural Gas to Coal Gas

- Equipment additions
  - o Improved controls
  - o New pipeline
- Impact on operations
  - o Increased utilization
  - o No immediate change

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CCT PROJECT INSTALLATION

Low NOx burner installation

Case 1

- No change in capacity utilization

Case 2

- Increased capacity utilization
- No other "physical" work

Case 3

- Increased capacity utilization
- Repair of deteriorated equipment
  - o Instrumentation
  - o Fans/tubing

Case 4

- Low NOx burners allow greater fuel burn

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CCT PROJECT REMOVAL

Removal of LIMB Demonstration Project

Case 1

- Capacity utilization decreases as compared to
  - o demonstration period
  - o pre-demonstration period

Case 2

- Capacity utilization increases as compared to
  - o demonstration period
  - o pre-demonstration period

Case 3

- Non-LIMB related changes during project
- Capacity utilization increases/decreases

Case 4

- Capacity utilization increase
- Post-demonstration controls are
  - o clean fuel
  - o coal cleaning

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COMBINED CYCLE ADDITION

Conversion from Simple to Combined Cycle

Impact on Operations

- Increased utilization
- No change in utilization
- Shift in primary fuel

Use of duct burner

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FACILITY REACTIVATION

Facility mothballed for 2 years

Facility remains in emission inventory

Facility operated at low capacity factor before deactivation

Case 1

- Facility brought online with no repair/replacement
- Facility operated at low capacity factor after reactivation

Case 2

- Repairs/replacement while mothballed
- Capable of operating up to full capacity when reactivated

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FACILITY UPGRADING

Case 1

- Improved instrumentation

Case 2

- Conversion from forced to balanced-draft

Case 3

- Improved turbine generator

Case 4

- Capacity upgrade of boiler

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ENVIRONMENTAL CONTROL DERATING

Reduce Capacity to Comply with Opacity Standard

No other operating constraint

Subsequent pollution control upgrade to meet standard at full capacity

Case 1

- State operatin. restriction/federal restriction
- ESP upgrade/ammonia injection

Case 2

- No restriction on operations
- Construction of new/retirement of old control equipment

Case 3

- No restriction on operations
- Removal of control equipment/use of clean fuel

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